

Application No.: 10/563,165
Filing Date: August 1, 2006

REMARKS

After entry of the present amendments, Claims 1-11 and 14-25 will be pending. Claims 1, 14, and 20-22 are amended herein. Claims 12 and 13 are canceled herein. Independent Claims 1 and 20-22 are amended to recite that the microorganism is selected from lactic acid bacteria. Claim 14 is amended to correct spelling errors in some of the recited microorganisms and to underline the microorganism names. Support for the amendments can be found throughout the claims and specification as filed, in particular page 4 lines 14-18 of the application as filed (corresponding to paragraph [0021] of the specification as published in U.S. Publication No. 2007-0059398). No new matter is added.

Applicants submit that this application is in condition for allowance and such action is earnestly requested. Each of the Examiner's reasons for rejection is addressed below.

Claim Objections

The Examiner objected to Claims 12-14. Claims 12-13 are canceled herein and Claim 14 is amended to correct spelling errors and to italicize the microorganisms. Applicants respectfully request withdrawal of this objection.

Rejections Under 35 U.S.C. § 112

The Examiner rejected Claims 1-19 for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner found that "cheesemaking mixture" was unclear. Applicants respectfully submit that it is clear from the specification and knowledge of skill in the art that a "cheesemaking mixture" is a mixture that does not necessarily contain just a single ingredient and is used for making cheese. For example, cheesemaking mixtures may be cheese milks as described in Table 2. Accordingly, Applicants respectfully request withdrawal of this rejection.

Rejections under 35 U.S.C. § 103(a)

It is well settled that the Examiner "bears the initial burden of presenting a *prima facie* case of unpatentability..." *In re Sullivan*, 498 F.3d 1345 (Fed. Cir. 2007). Until the Examiner has established a *prima facie* case of obviousness, the Applicant need not present arguments or

evidence of non-obviousness. To establish a *prima facie* case of obviousness, the Examiner must establish at least three elements. First, the prior art reference (or references when combined) must teach or suggest all of the claim limitations: “All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 165 U.S.P.Q. 494, 496 (CCPA 1970); (“the need to demonstrate the presence of all claim limitations in the prior art was not obviated [by KSR]”, *Abbott Labs. v. Sandoz, Inc.*, 2007 WL 1549498, *4 (N.D. Ill. May 24, 2007)); *see also M.P.E.P. § 2143.03*. Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986); *Pharmastem Therapeutics v. Viacell, Inc.*, 491 F.3d 1342, 83 U.S.P.Q.2d 1289 (Fed. Cir. 2007); *see also M.P.E.P. § 2143.02*. And finally, the Examiner must articulate some reason to modify or combine the cited references that renders the claim obvious. Merely establishing that the claimed elements can be found in the prior art is not sufficient to establish a *prima facie* case of obviousness. As is clear from cases such as *Adams*, a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (emphasis added).

The Combination of Schwartz and Bernard Does Not Make Claims 1-18 and 25

Claims 1-18 and 25 stand rejected under 35 U.S.C. § 103 as unpatentable in view of EP 071380 to Schwartz et al. (hereinafter “Schwartz”) in view of U.S. Patent No. 4,948,613 to Bernard et al. (hereinafter (Bernard”).

Schwartz discloses a process for producing functionalized whey by forming a fermentation broth of the whey and yeast extract and then fermenting the whey broth with *Xanthomonas campestris*. *See* page 1, lines 4-10. Schwartz also discloses that “Dairy whey, a waste product of cheese production, may be functionalized by fermentation techniques to produce a functionalized whey which serves as a thickening agent in the food industry. This simultaneously provides a method for utilizing the whey waste produced.” Abstract. Importantly, Schwartz is focused exclusively on the benefits of a specific strain of *X. campestris* that they identified. *See* page 4, lines 10-15.

As the Examiner noted, Schwartz fails to disclose the use of its product in cheese making (“R1 is silent regarding the use of this product in cheesemaking”). The Examiner further found

that Bernard "discloses the incorporation of xanthan gum into a mixture for the production of processed cheese. (Col. 5, Example 2). In the formulation disclosed by R2, xanthan gum and a protein concentrate (caseinate) are being incorporated into the processed cheese formulation." O.A. page 4. Thus, the Examiner concludes that it would be obvious to add the fermentate of Schwartz into the cheese product Bernard. Applicants disagree with this reasoning. There is no reason to use the fermentate produced by the process of Schwartz in the process of Bernard rather than pure xanthan gum. Xanthan gum is a readily available commodity. Neither of the references themselves or the Examiner provide any advantage or other reason to use the fermentate of Schwartz in the process of Bernard rather than a pure, easily available xanthan gum. To the contrary, one of skill in the art would recognize that using the impure fermentate of Schwartz would change the process and principle of operation of Bernard. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). Accordingly, the Applicants respectfully request withdrawal of this rejection for at least this reason.

The combination also fails to disclose the features of Claim 1 as amended herein. Schwartz fails to disclose a process for using lactic acid bacteria. Claim 1, as amended herein recite in part "mixing into a cheesemaking mixture or product, a heat-killed ferment of an exopolysaccharide-producing-microorganism without separating the exopolysaccharide from the other components of the ferment, wherein the microorganism is selected from lactic acid bacteria."

Bernard fails to make up for this deficiency. Bernard discloses that "the subject of the present invention is thus a manufacturing process for a processed cheese or processed cheese specialty with a supple, original texture, similar to those of traditional cheeses and possessing holes visible to the naked eye, characterized in that a processed cheese is beaten while hot in the presence of an inert gas so as to cause the cheese to swell, the whipped cheese thus obtained is subjected to a partial reduction in volume while still hot and the product obtained is cooled rapidly." Col. 2, lines 33-42. Thus, Bernard is concerned with the use of an inert gas while beating and is not concerned with thickening agents. Bernard uses purified xanthan gum in its

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process and there is no disclosure or reason provided in Bernard to use any other agent, much less “a heat-killed ferment of an exopolysaccharide-producing-microorganism without separating the exopolysaccharide from the other components of the ferment” and there is certainly no teaching that an exopolysaccharide from a lactic acid bacteria can be used.

There is simply no reason in Schwartz or Bernard, alone or in combination, which would lead to the use of a heat-killed lactic acid bacterial ferment in making a cheese. Also, the exopolysaccharide produced by lactic acid bacteria is structurally different from the exopolysaccharide produced by *Xanthomonas campestris*. Accordingly, Applicants respectfully request withdrawal of this rejection for at least this reason.

The Examiner found that “given that R1 discloses the use of hydrolyzed whey in the production of xanthan gum, it is obvious to carry out the hydrolysis by either using lactase or galactosidase or using lactic acid bacteria which hydrolyze lactose.” O.A. page 3. Applicants submit that the Examiner has only provided a conclusory statement regarding the use of lactic acid bacteria in the process of Schwartz and has not provided the necessary specific reason to modify Schwartz to use lactic acid bacteria. Schwartz only discloses the use of one specific strain of *Xanthomonas campestris* (ATCC 31923). Further, there is no disclosure in Schwartz that any other bacteria strain would produce the desired product. In fact, Schwartz discloses that even the parent strain *X. campestris* (ATCC 31922) did not produce the desired product. See page 4, lines 10-15 “*X. campestris* ATCC 31923 was isolated by continuous enrichment and selection in a lactose minimal medium from the parent strain, ATCC 31922, which either grows poorly or not at all, and produces little or no polymer, when lactose is the sole source of carbon and energy. Further, ATCC 31922 grows well but does not produce polymer on whey medium without glucose supplementation, and the lactose in the whey is not used.”). The skilled artisan would appreciate that the exopolysaccharide produced by the lactic acid bacteria is structurally different from the exopolysaccharide produced by *Xanthomonas campestris*. Thus, Schwartz teaches away from using different bacteria strains. It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). Accordingly, Applicants submit that the combination is improper for at least this reason.

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Moreover, since Schwartz is focused on using X. campestris, modifying Schwartz to use a different type of bacteria and different substrate will materially change the principle of operation of the process of Schwartz. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). Accordingly, Applicants submit that the combination is improper for at least this reason.

Claims 2-19 and 24-25 recite additional features of advantage and utility. Furthermore, these claims are allowable *a fortiori* for substantially the same reasons presented above. Claims 2-19 and 24-25 depend from and therefore include all of the features of Claim 1, which distinguish patentably over the combination of Schwartz and Bernard proposed by the Examiner. The combination of Schwartz and Bernard proposed by the Examiner does not include all of the features of Claim 1, let alone the additional unique combinations of features recited by Claims 2-19 and 24-25. Accordingly, Applicants respectfully request that the rejection of these dependent claims also be withdrawn.

The Combination of Schwartz and Chen Does Not Make Claims 19-24

Claims 19-24 stand rejected under 35 U.S.C. § 103 as unpatentable in view of Schwartz in view of U.S. Patent No. 5,104,674 to Chen et al. (hereinafter "Chen").

The Examiner found Chen to disclose "the preparation of polysaccharide/protein complex dispersions which are suitable for use as fat substitute compositions in food products such as ice cream, dressings, dips, spreads". Office Action page 5. The Examiner found that it would have been obvious to use the fermentate of Schwartz in the process of Chen. The Examiner further found that it would have been obvious to incorporate the products of Chen into cheese making bases.

Independent Claim 20-22 are amended herein to recite the use of a heat-killed ferment of an exopolysaccharide-producing-microorganism without separating the exopolysaccharide from the other components of the ferment, wherein the microorganism is selected from lactic acid bacteria

As discussed above, Schwartz fails to disclose the use of lactic acid bacteria. Chen fails to make up for this deficiency. Chen does not suggest using polysaccharides from lactic acid bacteria. In addition, there is no reason to use a fermentate rather than a purified exopolysaccharide in Chen. Chen relates to microfragmented ionic polysaccharide/protein complexes for use as fat substitute compositions in food products. Abstract. The complexes of Chen are prepared by mixing purified polysaccharides with proteins and precipitating the polysaccharide/protein complex at a pH close to the protein's isoelectric point. See col. 5, line 55 to col. 6, line 41; Example 1. Chen only discloses the use of *purified* exopolysaccharide. Accordingly, there is no reason to use the fermentate of Schwartz much less a fermentate produced using lactic acid bacteria.

Accordingly, the combination of Chen and Schwartz fail to disclose the features of Claims 20-22, as amended herein. As discussed above, there is no reason to modify Schwartz to use lactic acid bacteria and such a modification would be improper because it changes the principle of operation of Schwartz. Schwartz is focused on the benefits of one specific strain of *Xanthomonas campestris* and provides no reason to use other strains of *X. campestris*, much less other types of bacteria.

There is also no reason to think that the recited heat-killed ferment would work in the complicated process of Chen because Chen *only* disclose the use of purified exopolysaccharides.

The skilled artisan would appreciate that the exopolysaccharide produced by the lactic acid bacteria is structurally different from the exopolysaccharide produced by *Xanthomonas campestris* in Schwartz and the exopolysaccharides of Chen.

In conclusion, Applicants respectfully submit that Claims 19-24 are not obvious in view of Schwartz and Chen and request withdrawal of the rejection.

No Disclaimers or Disavowals

Although the present communication includes alterations to the application or claims, or characterizations of claim scope or referenced art, Applicants are not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicants reserve the right to pursue at a later date any previously pending or other

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broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicants have made any disclaimers or disavowals of any subject matter supported by the present application.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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